

L3 ANSWER 119 OF 161 CA COPYRIGHT 2005 ACS on STN
AN 110:159282 CA
ED Entered STN: 30 Apr 1989
TI Sintered honeycomb-shaped ceramic articles and their manufacture
IN Watanabe, Terufusa; Kuwabara, Mitsuo; Iseda, Yasushi; Inoue, Masahiro
PA Honda Motor Co., Ltd., Japan
SO Jpn. Kokai Tokkyo Koho, 7 pp.
CODEN: JKXXAF
DT Patent
LA Japanese
IC ICM C04B038-00
CC 57-2 (Ceramics)

FAN.CNT 1

	PATENT NO.	KIND	DATE	APPLICATION NO.	DATE
PI	JP 63256576	A2	19881024	JP 1987-91435	19870414
PRAI	JP 1987-91435		19870414		

CLASS

PATENT NO.	CLASS	PATENT FAMILY CLASSIFICATION CODES
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JP 63256576	ICM	C04B038-00
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AB Ceramic powders are slurried with **water** and a powder, which is soluble in acid and foams on reacting with **water**, the slurry is debubbled, injected into gypsum molds, foamed to form greenware, the greenware is dried, presintered, immersed in an acid to remove the residual acid-soluble powder, and sintered to obtain honeycomb-shaped ceramic articles having micropores on the cell walls. Thus, Si_3N_4 , acid-soluble powders of $\text{Na}_2\text{O} \cdot \text{SiO}_2 \cdot \text{H}_2\text{O}$ and $(\text{NH}_4)_3\text{B}_4\text{O}_7$, sintering aids Al_2O_3 and Y_2O_3 , **water**, and a small amount of polymer were made into a slurry, the slurry was mixed with a debubbling agent, debubbled at 10-2-10-3 torr, injected into a gypsum mold, and solidified in the mold covered with a metal lid. The greenware was then dried, heated to remove organic materials, presintered at 1200° and 0.8 torr, treated with 4 N HNO_3 , and hot isostatically pressed at 1750° and 1000 bar to obtain a sintered Si_3N_4 article. The invention articles can be used as catalyst carriers or for manufacture of metal-ceramic composites by impregnating molten metal into the articles.

ST sintered porous **silicon nitride**; **sodium silicate** porous **silicon nitride**; ammonium borate porous **silicon nitride**

IT Ceramic materials and wares
(**silicon nitride**, honeycomb, with porous walls, manufacture of)

IT 12033-89-5P, **Silicon nitride** (Si_3N_4), uses and